10/648,740.

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*** YOU HAVE NEW MAIL ***

=> s oligonucleotide? (3a) synthesis
L1       24608 OLIGONUCLEOTIDE? (3A) SYNTHESIS

=> s l1 and carbonate (3a) protect?
L2          48 L1 AND CARBONATE (3A) PROTECT?

=> dup rem l2
PROCESSING COMPLETED FOR L2
L3           44 DUP REM L2 (4 DUPLICATES REMOVED)

=> s l3 and phosphotriester
L4          18 L3 AND PHOSPHOTRIESTER

=> d l4 bib abs 1-18

L4   ANSWER 1 OF 18  WPIDS  COPYRIGHT 2005 THE THOMSON CORP on STN
AN   2005-513718 [53]   WPIDS
CR   2000-225901 [20]
DNC  C2005-155771
TI   Synthesizing oligonucleotides, by condensing hydroxyl group of
     support-bound nucleoside with monomeric nucleoside phosphoramidite to form
     intermediate and converting carbonate-protected
     hydroxyl group to free hydroxyl moiety.
DC   B04 D16
IN   BETLEY, J R; CARUTHERS, M H; DELLINGER, D J
PA   (AGIL-N) AGILENT TECHNOLOGIES INC
CYC  3
PI   EP 1553102      A1 20050713 (200553)*      41
        R: DE FR GB
ADT  EP 1553102 A1 Div ex EP 1999-306168 19990803, EP 2005-75379 19990803
FDT  EP 1553102 A1 Div ex EP 984021
PRAI US 1999-338179       19990622; US 1998-128052       19980803
AN   2005-513718 [53]   WPIDS
CR   2000-225901 [20]
AB   EP   1553102 A UPAB: 20050818
     NOVELTY - Synthesizing oligonucleotides, involves condensing the 3'-OH or
     5'-OH group of a support-bound nucleoside or oligonucleotide with a
     monomeric nucleoside phosphoramidite having a carbonate-
     protected hydroxyl group, to provide an intermediate and
     deprotecting the intermediate to convert the carbonate-
     protected hydroxyl group to a free hydroxyl moiety and
     simultaneously oxidize the phosphite triester linkage to give a
```

phosphotriester linkage.

DETAILED DESCRIPTION - Synthesizing (M1) oligonucleotides, involves condensing the 3'-OH or 5'-OH group of a support-bound nucleoside or oligonucleotide with a monomeric nucleoside phosphoramidite having a **carbonate-protected** hydroxyl group, to provide an intermediate in which the support-bound nucleoside or oligonucleotide is bound to the monomeric nucleoside group a phosphite triester linkage, and deprotecting the intermediate to convert the **carbonate-protected** hydroxyl group to a free hydroxyl moiety and simultaneously oxidize the phosphite triester linkage to give a **phosphotriester** linkage.

An INDEPENDENT CLAIM is also included for making an oligonucleotide array made up of array features each presenting a specified oligonucleotide sequence at an address on an array substance, involves providing a hydroxyl-derivatized array substrate and treating the array substrate to protect hydroxyl moieties on the derivatized substrate from reaction with phosphoramidite, then iteratively carrying out the steps of applying droplets of an alpha effect nucleophile to effect deprotection of hydroxyl moieties at selected address, and flooding the array substrate with the medium containing a selected monomeric nucleoside phosphoramidite having a **carbonate-protected** hydroxyl group, to permit covalent attachment of the selected nucleoside to the deprotected hydroxyl moieties at the selected addresses.

USE - (M1) is useful for synthesizing oligonucleotides (claimed). (M1) is useful in the highly parallel, microscale **synthesis** of **oligonucleotides**, and thus has utility in fields of biochemistry, molecular biology and pharmacology, and in medical diagnostic and screening technologies.

ADVANTAGE - (M1) enables efficient solid-phase **synthesis** of **oligonucleotides** of lengths upto 25 nucleotides and greater. The use of neutral or mildly basic conditions to remove hydroxyl-protecting groups prevents acid-induced depurination. The reagents used provide for irreversible deprotection, significantly reducing the likelihood of unwanted side reactions and increasing the overall yield of the desired product. (M1) provides for simultaneous oxidation of internucleoside phosphite triester linkage and removal of hydroxyl-protecting group, eliminating the extra step for synthesizing oligonucleotides. (M1) also avoids the extra step of removing exocyclic amine protecting groups, as the reagents used for hydroxyl group deprotection substantially remove exocyclic amine protecting groups.

Dwg.0/7

L4 ANSWER 2 OF 18 USPATFULL on STN
AN 2005:57493 USPATFULL
TI Exocyclic amine triaryl methyl protecting groups in two step polynucleotide synthesis
IN Dellinger, Douglas J., Boulder, CO, UNITED STATES
Sierzchala, Agnieszka B., Boulder, CO, UNITED STATES
Caruthers, Marvin H., Boulder, CO, UNITED STATES
PI US 2005049411 A1 20050303
AI US 2003-652064 A1 20030830 (10)
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, INC., Legal Department, DL429, Intellectual Property Administration, P.O. Box 7599, Loveland, CO, 80537-0599
CLMN Number of Claims: 21
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 1531
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Precursors for use in the synthesis of polynucleotides and methods of using the precursors in synthesizing polynucleotides are disclosed. The precursors include a heterocyclic base having an exocyclic amine group and a substituted or unsubstituted triaryl methyl protecting group bound to the exocyclic amine group.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 3 OF 18 USPATFULL on STN
AN 2005:57489 USPATFULL
TI Precursors for two-step polynucleotide synthesis
IN Dellinger, Douglas J., Boulder, CO, UNITED STATES
Sierzchala, Agnieszka B., Boulder, CO, UNITED STATES
Caruthers, Marvin H., Boulder, CO, UNITED STATES
PI US 2005049407 A1 20050303
AI US 2003-652048 A1 20030830 (10)
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, INC., Legal Department, DL429, Intellectual Property Administration, P.O. Box 7599, Loveland, CO, 80537-0599
CLMN Number of Claims: 26
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 1564
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Precursors for use in the synthesis of polynucleotides are disclosed. The precursors include a heterocyclic base having an exocyclic amine group and a substituted or unsubstituted triaryl methyl protecting group bound to the exocyclic amine group.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 4 OF 18 USPATFULL on STN
AN 2005:56686 USPATFULL
TI Method for polynucleotide synthesis
IN Dellinger, Douglas J., Boulder, CO, UNITED STATES
Dellinger, Geraldine, Boulder, CO, UNITED STATES
Sierzchala, Agnieszka B., Boulder, CO, UNITED STATES
Caruthers, Marvin H., Boulder, CO, UNITED STATES
PI US 2005048601 A1 20050303
AI US 2003-652054 A1 20030830 (10)
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, INC., Legal Department, DL429, Intellectual Property Administration, P.O. Box 7599, Loveland, CO, 80537-0599
CLMN Number of Claims: 35
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 2443
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods of forming an internucleotide bond are disclosed. Such methods find use in synthesis of polynucleotides. The method involves contacting a functionalized support with a precursor having an exocyclic amine triaryl methyl protecting group under conditions and for a time sufficient to result in internucleotide bond formation. The functionalized support includes a solid support, a triaryl methyl linker group, and a nucleoside moiety having a reactive site hydroxyl, the nucleoside moiety attached to the solid support via the triaryl methyl linker group.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 5 OF 18 USPATFULL on STN
AN 2005:56582 USPATFULL
TI Cleavable linker for polynucleotide synthesis
IN Dellinger, Douglas J., Boulder, CO, UNITED STATES
Dellinger, Geraldine, Boulder, CO, UNITED STATES
Caruthers, Marvin H., Boulder, CO, UNITED STATES
PI US 2005048497 A1 20050303
AI US 2003-652063 A1 20030830 (10)
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, INC., Legal Department, DL429, Intellectual Property Administration, P.O. Box 7599, Loveland, CO, 80537-0599
CLMN Number of Claims: 23
ECL Exemplary Claim: 1

DRWN 2 Drawing Page(s)
LN.CNT 1803
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Functionalized supports for polynucleotide synthesis are disclosed. The supports have linker moieties that are stable to conditions used in polynucleotide synthesis, but may be cleaved to release synthesized polynucleotides from the support. Methods of making the functionalized supports and methods of using are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 6 OF 18 USPATFULL on STN
AN 2005:56581 USPATFULL
TI Method of polynucleotide synthesis using modified support
IN Dellinger, Douglas J., Boulder, CO, UNITED STATES
Dellinger, Geraldine, Boulder, CO, UNITED STATES
Hargreaves, John, Mountain View, CA, UNITED STATES
PI US 2005048496 A1 20050303
AI US 2003-652049 A1 20030830 (10)
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, INC., Legal Department, DL429, Intellectual Property Administration, P.O. Box 7599, Loveland, CO, 80537-0599
CLMN Number of Claims: 31
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 2081
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods for polynucleotide synthesis using modified support materials are disclosed. The synthesis reaction typically involves concurrent oxidation and deprotection reactions. Upon synthesis of a desired polynucleotide, the completed polynucleotide may be released from the modified support materials.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 7 OF 18 USPATFULL on STN
AN 2004:314490 USPATFULL
TI Releasable polymer arrays
IN Cuppoletti, Andrea, Livermore, CA, UNITED STATES
McGall, Glenn H., Palo Alto, CA, UNITED STATES
PA Affymetrix, INC., Santa Clara, CA (U.S. corporation)
PI US 2004248162 A1 20041209
AI US 2004-791005 A1 20040302 (10)
RLI Continuation-in-part of Ser. No. US 2003-738381, filed on 16 Dec 2003, PENDING
PRAI US 2002-434144P 20021217 (60)
DT Utility
FS APPLICATION
LREP AFFYMETRIX, INC, ATTN: CHIEF IP COUNSEL, LEGAL DEPT., 3380 CENTRAL EXPRESSWAY, SANTA CLARA, CA, 95051
CLMN Number of Claims: 32
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1394
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are provided for fabricating an array of polymers wherein the polymers may be released from the surface of the array by activation of a cleavable moiety. Also provided are arrays of polymers having of polymers wherein the polymers can be released from the surface of the array by activation of a releasable group. Arrays of nucleic acids wherein a nucleic acid probe may be released from the array by activation of a releasable groups and methods for fabrication of such arrays are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 8 OF 18 USPATFULL on STN

AN 2004:292960 USPATFULL
TI Methods of synthesizing oligonucleotides using **carbonate protecting** groups and alpha-effect nucleophile deprotection
IN Dellinger, Douglas J., Sunnyvale, CA, UNITED STATES
Caruthers, Marvin H., Boulder, CO, UNITED STATES
Betley, Jason R., Edmunds Suffolk, UNITED KINGDOM
PI US 2004230052 A1 20041118
AI US 2003-648740 A1 20030825 (10)
RLI Continuation of Ser. No. US 2001-756991, filed on 8 Jan 2001, GRANTED, Pat. No. US 6630581 Division of Ser. No. US 1999-338179, filed on 22 Jun 1999, GRANTED, Pat. No. US 6222030 Continuation-in-part of Ser. No. US 1998-128052, filed on 3 Aug 1998, ABANDONED
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, INC., INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT., P.O. BOX 7599, M/S DL429, LOVELAND, CO, 80537-0599
CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN 7 Drawing Page(s)
LN.CNT 1411
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides methods for synthesizing oligonucleotides using nucleoside monomers having **carbonate protected** hydroxyl groups that are deprotected with α-effect nucleophiles. The α-effect nucleophile irreversibly cleave the **carbonate protecting** groups while simultaneously oxidizing the internucleotide phosphite triester linkage to a phosphodiester linkage. The procedure may be carried out in aqueous solution at neutral to mildly basic pH. The method eliminates the need for separate deprotection and oxidation steps, and, since the use of acid to remove protecting groups is unnecessary, acid-induced depurination is avoided. Fluorescent or other readily detectable **carbonate protecting** groups can be used, enabling monitoring of individual reaction steps during **oligonucleotide synthesis**. The invention is particularly useful in the highly parallel, microscale **synthesis** of **oligonucleotides**.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 9 OF 18 USPATFULL on STN
AN 2004:134034 USPATFULL
TI METHODS FOR MODULATING THE SOLUBILITY OF SYNTHETIC POLYMERS
IN Gildea, Brian D., Billerica, MA, UNITED STATES
Coull, James M., Westford, MA, UNITED STATES
PI US 2004102571 A1 20040527
US 6770442 B2 20040803
AI US 2001-13283 A1 20011130 (10)
RLI Division of Ser. No. US 1999-225048, filed on 4 Jan 1999, GRANTED, Pat. No. US 6326479
PRAI US 1998-72772P 19980127 (60)
DT Utility
FS APPLICATION
LREP BRIAN D. GILDEA, APPLIED BIOSYSTEMS, 15 DEANGELO DRIVE, BEDFORD, MA, 01730
CLMN Number of Claims: 88
ECL Exemplary Claim: 1
DRWN 11 Drawing Page(s)
LN.CNT 2965
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention pertains to solubility enhanced polymers and methods, kits and compositions which enhance the aqueous solubility of said polymers. One set of preferred methods, kits and compositions embody or utilize phosphorous containing synthons and are most useful for modulating the solubility of synthetic nucleic acids and synthetic nucleic acid analogs. A second set of preferred methods, kits and compositions are most useful for modulating the aqueous solubility of peptides, other polyamides and most preferably peptide nucleic acid (PNA) polymers.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 10 OF 18 USPATFULL on STN
AN 2003:314687 USPATFULL
TI Biomolecular labeling
IN Turnbull, Kenneth D., Fayetteville, AR, United States
PA University of Arkansas, Little Rock, AK, United States (U.S. corporation)
PI US 6657052 B1 20031202
AI US 2000-516700 20000301 (9)
RLI Continuation-in-part of Ser. No. US 1998-57957, filed on 9 Apr 1998, now abandoned
PRAI US 1997-41883P 19970411 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Riley, Jezia
LREP Head, Johnson & Kachigian
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 126 Drawing Figure(s); 87 Drawing Page(s)
LN.CNT 5783
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method for using an organic compound to label polynucleotides is described. The method utilizes an organic compound including an oligonucleotide, and electrophilic active site, an active complex, and a phosphate binding site. The oligonucleotide has a sequence that is complimentary to a specific region of a polynucleotide. This facilitates labeling of DNA or RNA at a specific site in its sequence. The active site consists of a stable precursor, and only becomes reactive upon activation. Leaving and protecting functional groups may be attached to the active site in order to facilitate the formation of a stable precursor and subsequent activation. The active complex may be a drug, polypeptide or a reporter molecule such as an isotope or fluorescing compound. The phosphate binding sites may be any functional group capable of forming ionic bonds with phosphate oxygens. Nucleotide labeling using this compound does not interfere with a polynucleotide sequence. The described method for utilizing this compound may be performed in situ. Latent reactivity is utilized to make the reaction chemically specific, alkylating only phosphodiester groups on the polynucleotide. A lactonization reaction traps the trialkylphosphate in a stable form.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 11 OF 18 USPATFULL on STN
AN 2003:214617 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Cheruvallath, Zacharia S., San Diego, CA, UNITED STATES
Ravikumar, Vasulinga T., Carlsbad, CA, UNITED STATES
Cole, Douglas L., San Diego, CA, UNITED STATES
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA (U.S. corporation)
PI US 2003149260 A1 20030807
US 6677471 B2 20040113
AI US 2002-290587 A1 20021108 (10)
RLI Continuation of Ser. No. US 2001-16465, filed on 11 Dec 2001, GRANTED, Pat. No. US 6521775 Division of Ser. No. US 1999-349659, filed on 8 Jul 1999, GRANTED, Pat. No. US 6399756 Continuation-in-part of Ser. No. US 1998-111678, filed on 8 Jul 1998, GRANTED, Pat. No. US 6326478
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE, 46TH FLOOR, 1650 MARKET STREET, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 57
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 2248
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 12 OF 18 USPATFULL on STN
AN 2003:38365 USPATFULL
TI Polynucleotide synthesis
IN Perbost, Michel G.M., Cupertino, CA, UNITED STATES
PI US 2003028012 A1 20030206
AI US 2002-245211 A1 20020917 (10)
RLI Continuation of Ser. No. US 1999-420099, filed on 18 Oct 1999, GRANTED, Pat. No. US 6451998
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, INC., Legal Department, DL429, Intellectual Property Administration, P.O. Box 7599, Loveland, CO, 80537-0599
CLMN Number of Claims: 24
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 748
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method including coupling the moiety to a phospho or phosphite derivative of a protected alcohol, so as to form the corresponding phosphate or phosphite between the hydroxy and phospho or phosphite groups. The hydroxy group may be later de-protected by hydrolyzing the resulting compound to deprotect the protected alcohol and cleave the phosphate from the moiety so as to regenerate the hydroxy group of the moiety. The method has particular application to fabrication of addressable polynucleotide arrays and allows failed sequences, as well as inter-feature regions, to be left with a free hydroxy group at the ends of the molecules (failed sequences or linkers) at such locations.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 13 OF 18 USPATFULL on STN
AN 2002:239168 USPATFULL
TI Capping and de-capping during **oligonucleotide synthesis**
IN Perbost, Michael G. M., Cupertino, CA, United States
PA Agilent Technologies, Inc., Palo Alto, CA, United States (U.S. corporation)
PI US 6451998 B1 20020917
AI US 1999-420099 19991018 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Richter, Johann; Assistant Examiner: Crane, L. Eric
LREP Stewart, Gordon M.
CLMN Number of Claims: 24
ECL Exemplary Claim: 10,11
DRWN 7 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 770
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method of capping a hydroxy group of a moiety, comprising coupling the moiety to a phosphor or phosphite derivative of a protected alcohol, so as to form the corresponding phosphate or phosphite between the hydroxy and phosphor or phosphite groups. The hydroxy group may be later de-capped by hydrolyzing the resulting compound to deprotect the protected alcohol and cleave the phosphate from the moiety so as to regenerate the hydroxy group of the moiety. The method has particular application to fabrication of addressable polynucleotide arrays and allows failed sequences, as well as inter-feature regions, to be left with a free hydroxy group at the ends of the molecules (failed sequences or linkers) at such locations.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 14 OF 18 USPATFULL on STN
AN 2002:130084 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Cheruvallath, Zacharia S., San Diego, CA, United States
Ravikumar, Vasulinga T., Carlsbad, CA, United States
Cole, Douglas L., San Diego, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6399756 B1 20020604
AI US 1999-349659 19990708 (9)
RLI Continuation-in-part of Ser. No. US 1998-111678, filed on 8 Jul 1998, now abandoned
DT Utility
FS GRANTED
EXNAM Primary Examiner: Geist, Gary; Assistant Examiner: Crane, L. E.
LREP Woodcock Washburn LLP
CLMN Number of Claims: 52
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 2423
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 15 OF 18 USPATFULL on STN
AN 2002:106412 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Cheruvallath, Zacharia S., San Diego, CA, UNITED STATES
Ravikumar, Vasulinga T., Carlsbad, CA, UNITED STATES
Cole, Douglas L., San Diego, CA, UNITED STATES
PA ISIS Pharmaceuticals. Inc. (U.S. corporation)
PI US 2002055623 A1 20020509
US 6521775 B2 20030218
AI US 2001-16465 A1 20011211 (10)
RLI Division of Ser. No. US 1999-349659, filed on 8 Jul 1999, PENDING
Continuation-in-part of Ser. No. US 1998-111678, filed on 8 Jul 1998, PATENTED
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, One Liberty Place - 46th Floor, Philadelphia, PA, 19103
CLMN Number of Claims: 57
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 2243
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 16 OF 18 USPATFULL on STN
AN 2002:85181 USPATFULL
TI Solid phase **synthesis** of **oligonucleotides** using **carbonate protecting** groups and alpha-effect nucleophile deprotection
IN Dellinger, Douglas J., Sunnyvale, CA, UNITED STATES
Caruthers, Marvin H., Boulder, CO, UNITED STATES
Betley, Jason R., Bury St. Edmonds, UNITED KINGDOM
PI US 2002045221 A1 20020418
US 6630581 B2 20031007

AI US 2001-756991 A1 20010108 (9)
RLI Division of Ser. No. US 1999-338179, filed on 22 Jun 1999, UNKNOWN
DT Utility
FS APPLICATION
LREP AGILENT TECHNOLOGIES, Legal Department, 51 U-PD, Intellectual Property Administration, P. O. Box 58043, Santa Clara, CA, 95052-8043
CLMN Number of Claims: 52
ECL Exemplary Claim: 1
DRWN 7 Drawing Page(s)
LN.CNT 1526
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides a method for synthesizing oligonucleotides using **carbonate protection** of hydroxyl groups and nucleophilic deprotection reagents. The deprotection reagents irreversibly cleave the **carbonate protecting** groups while simultaneously oxidizing the internucleotide phosphite triester linkage, and can be used in aqueous solution at neutral to mildly basic pH. The method eliminates the need for separate deprotection and oxidation steps, and, since the use of acid to remove protecting groups is unnecessary, acid-induced depurination is avoided. Fluorescent or other readily detectable **carbonate protecting** groups can be used, enabling monitoring of individual reaction steps during **oligonucleotide synthesis**. The invention is particularly useful in the highly parallel, microscale **synthesis** of **oligonucleotides**. Reagents and kits for carrying out the aforementioned method are provided as well.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 17 OF 18 USPATFULL on STN
AN 2001:221151 USPATFULL
TI Synthetic polymers and methods, kits or compositions for modulating the solubility of same
IN Gildea, Brian D., Billerica, MA, United States
Coull, James M., Westford, MA, United States
PA Boston Probes, Inc., Bedford, MA, United States (U.S. corporation)
PI US 6326479 B1 20011204
AI US 1999-225048 19990104 (9)
PRAI US 1998-72772P 19980127 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Riley, Jezia
LREP Gildea, Brian D.
CLMN Number of Claims: 94
ECL Exemplary Claim: 1
DRWN 17 Drawing Figure(s); 11 Drawing Page(s)
LN.CNT 3013
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention pertains to solubility enhanced polymers and methods, kits and compositions which enhance the aqueous solubility of said polymers. One set of preferred methods, kits and compositions embody or utilize phosphorous containing synthons and are most useful for modulating the solubility of synthetic nucleic acids and synthetic nucleic acid analogs. A second set of preferred methods, kits and compositions are most useful for modulating the aqueous solubility of peptides, other polyamides and most preferably peptide nucleic add (PNA) polymers.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 18 OF 18 USPATFULL on STN
AN 1999:63399 USPATFULL
TI 5'to 3' nucleic acid synthesis using 3'-photoremovable protecting group
IN Pirrung, Michael C., Houston, TX, United States
Shuey, Steven W., Durham, NC, United States
Bradley, Jean-Claude, Durham, NC, United States
PA Duke University, Durham, NC, United States (U.S. corporation)
PI US 5908926 19990601

AI US 1995-406327 19950316 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Nixon & Vanderhye P.C.
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 635
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates, in general, to a method of synthesizing a nucleic acid, and, in particular, to a method of effecting 5' to 3' nucleic acid synthesis. The method can be used to prepare arrays of oligomers bound to a support via their 5' end. The invention also relates to a method of effecting mutation analysis using such arrays. The invention further relates to compounds and compositions suitable for use in such methods.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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=> s l6 and 3 (2w) 5 (2a) direction?
   4 FILES SEARCHED...
L8          1 L6 AND 3 (2W) 5 (2A) DIRECTION?

=> d l8 bib abs

L8   ANSWER 1 OF 1  USPATFULL on STN
AN     2005:16856  USPATFULL
TI     Modulation of C-reactive protein expression
IN     Crooke, Rosanne M., Carlsbad, CA, UNITED STATES
       Graham, Mark J., San Clemente, CA, UNITED STATES
PI     US 2005014257      A1   20050120
AI     US 2004-858500     A1   20040601 (10)
RLI    Continuation-in-part of Ser. No. US 2001-912724, filed on 25 Jul 2001,
       PENDING
PRAI   US 2003-475272P     20030602 (60)
       US 2004-540042P     20040128 (60)
DT     Utility
FS     APPLICATION
LREP   MARY E. BAK, HOWSON AND HOWSON, SPRING HOUSE CORPORATE CENTER, BOX 457,
       SPRING HOUSE, PA, 19477
CLMN   Number of Claims: 48
ECL    Exemplary Claim: 1
DRWN   No Drawings
LN.CNT 8576
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB     Compounds, compositions and methods are provided for modulating the
       expression of C-reactive protein. The compositions comprise
       oligonucleotides, targeted to nucleic acid encoding C-reactive protein.
       Methods of using these compounds for modulation of C-reactive protein
       expression and for diagnosis and treatment of disease associated with
       expression of C-reactive protein are provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.


=> d l8 kwic

L8   ANSWER 1 OF 1  USPATFULL on STN
DETD   . . . exceptions: thiation was effected by utilizing a 10% w/v
       solution of 3,H-1,2-benzodithiole-3-one 1,1-dioxide in acetonitrile for
       the oxidation of the phosphite linkages. The thiation reaction
       step time was increased to 180 seconds and preceded by the normal
       capping step. After cleavage. . .
DETD   [0202] Phosphotriester oligonucleotides are prepared as
       described in U.S. Pat. No. 5,023,243, herein incorporated by reference.
DETD   [0210] RNA oligonucleotides are synthesized in a stepwise fashion. Each
       nucleotide is added sequentially (3'- to 5'-
       direction) to a solid support-bound oligonucleotide. The first
       nucleoside at the 3'-end of the chain is covalently attached to a solid.
       . .
DETD   . . . accumulation was measured based on the amount of glycerol
       liberated from triglycerides by the enzyme lipoprotein lipase. Liberated
       glycerol is phosphorylated by glycerol kinase, and hydrogen
       peroxide is generated during the oxidation of
       glycerol-1-phosphate to dihydroxyacetone phosphate by glycerol phosphate
       oxidase. Horseradish peroxidase (HRP) uses H.sub.2O.sub.2 to. . .


=> d his

     (FILE 'HOME' ENTERED AT 10:08:50 ON 26 SEP 2005)

     FILE 'BIOSIS, MEDLINE, CAPLUS, WPIDS, USPATFULL' ENTERED AT 10:09:14 ON
     26 SEP 2005
L1           1 S PEROXIDE (10A) PHOSPHOTRIESTER
L2        9077 S PEROXIDE? (15A) PHOSPHO?
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L3          9076 S L2 NOT L1
L4            33 S L3 AND PHOSPHOTRIESTER
L5            33 DUP REM L4 (0 DUPLICATES REMOVED)
L6            29 S L5 AND PHOSPHITE
L7            29 S L6 AND OLIGONUCLEOTIDE?
L8             1 S L6 AND 3 (2W) 5 (2A) DIRECTION?

=> s l6 not l8
L9            28 L6 NOT L8

=> d l9 bib abs 1-26

L9   ANSWER 1 OF 28  USPATFULL on STN
AN     2005:240528  USPATFULL
TI     Enhancement of the stability of oligonucleotides comprising
       phosphorothioate linkages by addition of water-soluble antioxidants
IN     Krotz, Achim, San Diego, CA, UNITED STATES
       Mehta, Rahul, San Marcos, CA, UNITED STATES
PA     ISIS Pharmaceuticals, Inc., Carlsbad, CA, UNITED STATES (U.S.
       corporation)
PI     US 2005208528      A1   20050922
AI     US 2004-997221     A1   20041124 (10)
RLI    Continuation of Ser. No. US 2001-902953, filed on 11 Jul 2001, ABANDONED
DT     Utility
FS     APPLICATION
LREP   COZEN O'CONNOR, P.C., 1900 MARKET STREET, PHILADELPHIA, PA, 19103-3508,
       US
CLMN   Number of Claims: 7
ECL    Exemplary Claim: 1
DRWN   No Drawings
LN.CNT 1887
AB     Compositions and methods for inhibition of desulfurization in
       oligonucleotides comprising one or more phosphorothioate linkages.
       Antioxidants which partition into the aqueous phase of bi-phasic or
       multi-phasic topical pharmaceutical formulations inhibit desulfurization
       of phosphorothioate oligonucleotides, resulting in enhanced
       oligonucleotide stability.


L9   ANSWER 2 OF 28  USPATFULL on STN
AN     2005:132102  USPATFULL
TI     Methods for detection of chloral hydrate in dichloroacetic acid
IN     Wheeler, Patrick, Carlsbad, CA, UNITED STATES
       Capaldi, Daniel C., Encinitas, CA, UNITED STATES
PA     ISIS Pharmaceuticals, Inc. (U.S. corporation)
PI     US 2005113569      A1   20050526
AI     US 2003-679805     A1   20031006 (10)
RLI    Continuation of Ser. No. US 2002-59776, filed on 29 Jan 2002, GRANTED,
       Pat. No. US 6645716
PRAI   US 2001-264920P     20010130 (60)
DT     Utility
FS     APPLICATION
LREP   WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE - 46TH FLOOR, PHILADELPHIA, PA,
       19103, US
CLMN   Number of Claims: 18
ECL    Exemplary Claim: 1-28
DRWN   No Drawings
LN.CNT 582
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB     Methods for detecting chloral hydrate in dichloroacetic acid are
       described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9   ANSWER 3 OF 28  USPATFULL on STN
AN     2004:311794  USPATFULL
TI     Method and apparatus for desorption and ionization of analytes
IN     Hutchens, T. William, Mountain View, CA, UNITED STATES
```

Yip, Tai-Tung, Cupertino, CA, UNITED STATES
PI US 2004245450 A1 20041209
AI US 2004-887552 A1 20040707 (10)
RLI Continuation of Ser. No. US 2003-700297, filed on 31 Oct 2003, PENDING Continuation of Ser. No. US 2001-848512, filed on 12 Oct 2001, ABANDONED Continuation of Ser. No. US 1998-215380, filed on 18 Dec 1998, ABANDONED Division of Ser. No. US 1995-556951, filed on 27 Nov 1995, GRANTED, Pat. No. US 6020208 A 371 of International Ser. No. WO 1994-US6064, filed on 27 May 1994, PENDING Continuation-in-part of Ser. No. US 1993-68896, filed on 28 May 1993, ABANDONED
DT Utility
FS APPLICATION
LREP TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
CLMN Number of Claims: 14
ECL Exemplary Claim: CLM-01-73
DRWN 42 Drawing Page(s)
LN.CNT 2424
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates generally to methods and apparatus for desorption and ionization of analytes for the purpose of subsequent scientific analysis by such methods, for example, as mass spectrometry or biosensors. More specifically, this invention relates to the field of mass spectrometry, especially to the type of matrix-assisted laser desorption/ionization, time-of-flight mass spectrometry used to analyze macromolecules, such as proteins or biomolecules. Most specifically, this invention relates to the sample probe geometry, sample probe composition, and sample probe surface chemistries that enable the selective capture and desorption of analytes, including intact macromolecules, directly from the probe surface into the gas (vapor) phase without added chemical matrix.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 4 OF 28 USPATFULL on STN
AN 2004:108372 USPATFULL
TI Novel phosphate and thiophosphate protecting groups
IN Guzaev, Andrei P., Vista, CA, UNITED STATES
Manoharan, Muthiah, Cambridge, MA, UNITED STATES
PI US 2004082774 A1 20040429
AI US 2003-610664 A1 20030630 (10)
RLI Continuation-in-part of Ser. No. US 2000-526386, filed on 16 Mar 2000, GRANTED, Pat. No. US 6610837 Continuation-in-part of Ser. No. US 1999-268797, filed on 16 Mar 1999, GRANTED, Pat. No. US 6121437
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE - 46TH FLOOR, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 63
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 3143
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel P(III) bisamidite reagents as phosphorus protecting groups, nucleoside phosphoramidite intermediates, and synthetic processes for making the same are disclosed. Furthermore, oligomeric compounds are prepared through the protection of one or more internucleosidic phosphorus functionalities, preferably followed by oxidation and cleavage of the protecting groups to provide oligonucleotides. Methods for preparing oligoribonucleotides are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 5 OF 28 USPATFULL on STN
AN 2004:7470 USPATFULL
TI Antisense modulation of phospholipase D2 expression
IN Bennett, C. Frank, Carlsbad, CA, UNITED STATES
Dobie, Kenneth W., Del Mar, CA, UNITED STATES

PA Isis Pharmaceuticals Inc. (U.S. corporation)
PI US 2004005705 A1 20040108
AI US 2002-177896 A1 20020620 (10)
DT Utility
FS APPLICATION
LREP FENWICK & WEST LLP, 801 CALIFORNIA STREET, MOUNTAIN VIEW, CA, 94014
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 3727
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Antisense compounds, compositions and methods are provided for modulating the expression of phospholipase D2. The compositions comprise antisense compounds, particularly antisense oligonucleotides, targeted to nucleic acids encoding phospholipase D2. Methods of using these compounds for modulation of phospholipase D2 expression and for treatment of diseases associated with expression of phospholipase D2 are provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 6 OF 28 USPATFULL on STN
AN 2003:302933 USPATFULL
TI Process for the preparation of oligonucleotide compounds
IN Capaldi, Daniel C., Encinitas, CA, United States
Ravikumar, Vasulinga T., Carlsbad, CA, United States
Cole, Douglas L., San Diego, CA, United States
PA Isis Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6649750 B1 20031118
AI US 2000-477878 20000105 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wilson, James O.; Assistant Examiner: Crane, Lawrence E
LREP Woodcock Washburn LLP
CLMN Number of Claims: 57
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 1866
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein high purity oligomers are prepared using support bound phosphoramidite protocols starting with a nucleoside or larger synthon linked to a support media through a nucleosidic heterocyclic base moiety. Intermediates undergoing depurination at the support linkage site are removed during the wash cycle. Also provided are compositions useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 7 OF 28 USPATFULL on STN
AN 2003:295043 USPATFULL
TI Labeled oligonucleotides, methods for making same, and compounds useful therefor
IN Manoharan, Muthiah, Carlsbad, CA, UNITED STATES
Guzaev, Andrei P., Carlsbad, CA, UNITED STATES
PI US 2003208061 A1 20031106
US 6825338 B2 20041130
AI US 2001-823031 A1 20010330 (9)
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE - 46TH FLOOR, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 60
ECL Exemplary Claim: 1
DRWN 10 Drawing Page(s)
LN.CNT 2660
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Selectively functionalized oligonucleotides, methods for making same, and compounds useful therefor are disclosed. The oligonucleotides can be selectively functionalized with a first conjugate group at the 3'-terminial position and optionally functionalized with a second conjugate group at the 5'-terminal position and/or one or more internucleotides. Alternatively, the oligonucleotides can be selectively functionalized with a first conjugate group at the 5'-terminal position and optionally functionalized with a second conjugate group at one or more internucleotides. In yet another embodiment, the oligonucleotides can be functionalized with a first conjugate group at one or more internucleotides and with a second conjugate group at one or more different internucleotides.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 8 OF 28 USPATFULL on STN
AN 2003:285303 USPATFULL
TI C3'-methylene hydrogen phosphonate oligomers and related compounds
IN Cook, Phillip Dan, Fallbrook, CA, United States
Manoharan, Muthiah, Carlsbad, CA, United States
Maier, Martin, Carlsbad, CA, United States
An, Haoyun, Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6639061 B1 20031028
AI US 1999-349033 19990707 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wilson, James O.; Assistant Examiner: McIntosh, Traviss C.
LREP Woodcock Washburn LLP
CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN 15 Drawing Figure(s); 15 Drawing Page(s)
LN.CNT 2793
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention is directed to nucleoside monomers wherein the 3'-O atom is replaced with a methylene group. The present invention also provides oligomers comprising a plurality of such monomers which are linked by methylene phosphonate linkages. Further, methods of preparing monomers and oligomers according to the present invention are provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 9 OF 28 USPATFULL on STN
AN 2003:228403 USPATFULL
TI Phosphate and thiophosphate protecting groups
IN Guzaev, Andrei P., Carlsbad, CA, United States
Manoharan, Muthiah, Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6610837 B1 20030826
AI US 2000-526386 20000316 (9)
RLI Continuation-in-part of Ser. No. US 1999-268797, filed on 16 Mar 1999, now patented, Pat. No. US 6121437
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wilson, James O.; Assistant Examiner: Crane, Lawrence E
LREP Woodcock Washburn LLP
CLMN Number of Claims: 56
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 3085
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel P(III) bisamidite reagents as phosphorus protecting groups, nucleoside phosphoramidite intermediates, and synthetic processes for making the same are disclosed. Furthermore, oligomeric compounds are

prepared through the protection of one or more internucleosidic phosphorus functionalities, preferably followed by oxidation and cleavage of the protecting groups to provide oligonucleotides.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 10 OF 28 USPATFULL on STN
AN 2003:220452 USPATFULL
TI Processes for the synthesis of oligomeric compounds
IN Manoharan, Muthiah, Carlsbad, CA, UNITED STATES
Guzaev, Andrei, Carlsbad, CA, UNITED STATES
PI US 2003153743 A1 20030814
AI US 2003-336200 A1 20030103 (10)
RLI Division of Ser. No. US 1998-66638, filed on 24 Apr 1998, GRANTED, Pat. No. US 6531590
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE, 46TH FLOOR, 1650 MARKET STREET, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 56
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 1543
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods for the preparation of oligonucleotides having bioreversible phosphate blocking groups are disclosed. The oligonucleotides are prepared utilizing amidite type chemistry wherein the bioreversible phosphorus protecting group is formed as an integral part of the amidite reagent.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 11 OF 28 USPATFULL on STN
AN 2003:214617 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Cheruvallath, Zacharia S., San Diego, CA, UNITED STATES
Ravikumar, Vasulinga T., Carlsbad, CA, UNITED STATES
Cole, Douglas L., San Diego, CA, UNITED STATES
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA (U.S. corporation)
PI US 2003149260 A1 20030807
US 6677471 B2 20040113
AI US 2002-290587 A1 20021108 (10)
RLI Continuation of Ser. No. US 2001-16465, filed on 11 Dec 2001, GRANTED, Pat. No. US 6521775 Division of Ser. No. US 1999-349659, filed on 8 Jul 1999, GRANTED, Pat. No. US 6399756 Continuation-in-part of Ser. No. US 1998-111678, filed on 8 Jul 1998, GRANTED, Pat. No. US 6326478
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE, 46TH FLOOR, 1650 MARKET STREET, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 57
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 2248
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 12 OF 28 USPATFULL on STN
AN 2003:201599 USPATFULL
TI C3' -methylene hydrogen phosphonate oligomers and related compounds
IN Cook, Phillip Dan, Fallbrook, CA, UNITED STATES
Manoharan, Muthiah, Carlsbad, CA, UNITED STATES
Maier, Martin, Carlsbad, CA, UNITED STATES

An, Haoyun, Carlsbad, CA, UNITED STATES
PI US 2003139586 A1 20030724
AI US 2002-322242 A1 20021218 (10)
RLI Continuation of Ser. No. US 1999-349033, filed on 7 Jul 1999, PENDING Continuation of Ser. No. US 2002-153320, filed on 22 May 2002, PENDING Continuation of Ser. No. US 1998-58470, filed on 10 Apr 1998, ABANDONED Division of Ser. No. US 1996-763354, filed on 11 Dec 1996, GRANTED, Pat. No. US 5965721 Continuation of Ser. No. US 1994-150079, filed on 7 Apr 1994, GRANTED, Pat. No. US 5610289
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE, 46TH FLOOR, 1650 MARKET STREET, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 35
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 2698
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention is directed to nucleoside monomers wherein the 3'-O atom is replaced with a methylene group. The present invention also provides oligomers comprising a plurality of such monomers which are linked by methylene phosphonate linkages. Further, methods of preparing monomers and oligomers according to the present invention are provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 13 OF 28 USPATFULL on STN
AN 2003:140928 USPATFULL
TI Enhancement of the stability of oligonucleotides comprising phosphorothioate linkages by addition of water-soluble antioxidants
IN Krotz, Achim H., San Diego, CA, UNITED STATES
Mehta, Rahul, San Marcos, CA, UNITED STATES
PI US 2003096770 A1 20030522
AI US 2001-902953 A1 20010711 (9)
DT Utility
FS APPLICATION
LREP Woodcock Washburn LLP, One Liberty Place - 46th Floor, Philadelphia, PA, 19103
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1924
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Compositions and methods for inhibition of desulfurization in oligonucleotides comprising one or more phosphorothioate linkages. Antioxidants which partition into the aqueous phase of bi-phasic or multi-phasic topical pharmaceutical formulations inhibit desulfurization of phosphorothioate oligonucleotides, resulting in enhanced oligonucleotide stability.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 14 OF 28 USPATFULL on STN
AN 2003:127864 USPATFULL
TI AMINOOXY-MODIFIED NUCLEOSIDIC COMPOUNDS AND OLIGOMERIC COMPOUNDS PREPARED THEREFROM
IN MANOHARAN, MUTHIAH, CARLSBAD, CA, UNITED STATES
COOK, PHILLIP DAN, FALLBROOK, CA, UNITED STATES
PRAKASH, THAZHA P., CARLSBAD, CA, UNITED STATES
KAWASAKI, ANDREW M., OCEANSIDE, CA, UNITED STATES
PI US 2003088079 A1 20030508
US 6639062 B2 20031028
AI US 1999-370541 A1 19990809 (9)
RLI Continuation-in-part of Ser. No. US 1998-130973, filed on 7 Aug 1998, GRANTED, Pat. No. US 6172209 Continuation-in-part of Ser. No. US 1999-344260, filed on 25 Jun 1999, PENDING Continuation-in-part of Ser. No. US 1998-16520, filed on 30 Jan 1998, GRANTED, Pat. No. US 6127533
PRAI US 1997-37143P 19970214 (60)

DT Utility
FS APPLICATION
LREP MICHAEL P STRAHER, WOODCOCK WASHBURN KURTZ, MACKIEWICZ & NORRIS, ONE LIBERTY PLACE 46TH FLOOR, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 89
ECL Exemplary Claim: 1
DRWN 34 Drawing Page(s)
LN.CNT 4534
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Nucleosidic monomers and oligomeric compounds prepared therefrom are provided which have increased nuclease resistance, substituent groups (such as 2'-aminooxy groups) for increasing binding affinity to complementary strand, and regions of 2'-deoxy-erythro-pentofuranosyl nucleotides that activate RNase H. Such oligomeric compounds are useful for diagnostics and other research purposes, for modulating the expression of a protein in organisms, and for the diagnosis, detection and treatment of other conditions susceptible to oligonucleotide therapeutics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 15 OF 28 USPATFULL on STN
AN 2003:67843 USPATFULL
TI Processes for the synthesis of oligonucleotide compounds
IN Manoharan, Muthiah, Carlsbad, CA, United States
Guzaev, Andrei, Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6531590 B1 20030311
AI US 1998-66638 19980424 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Richter, Johann; Assistant Examiner: Crane, Lawrence E
LREP Woodcock Washburn LLP
CLMN Number of Claims: 19
ECL Exemplary Claim: 1,19
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 1597
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods for the preparation of oligonucleotides having bioreversible phosphate blocking groups are disclosed. The oligonucleotides are prepared utilizing amidite type chemistry wherein the bioreversible phosphorus protecting group is formed as an integral part of the amidite reagent.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 16 OF 28 USPATFULL on STN
AN 2002:221343 USPATFULL
TI Methods for detection of chloral hydrate in dichloroacetic acid
IN Wheeler, Patrick, Carlsbad, CA, UNITED STATES
Capaldi, Daniel C., Encinitas, CA, UNITED STATES
PI US 2002119483 A1 20020829
US 6645716 B2 20031111
AI US 2002-59776 A1 20020129 (10)
PRAI US 2001-264920P 20010130 (60)
DT Utility
FS APPLICATION
LREP Woodcock Washburn LLP, One Liberty Place - 46th Floor, Philadelphia, PA, 19103
CLMN Number of Claims: 28
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 614
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods for detecting chloral hydrate in dichloroacetic acid are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 17 OF 28 USPATFULL on STN
AN 2002:160864 USPATFULL
TI C3'-methylene hydrogen phosphonate monomers and related compounds
IN Cook, Phillip Dan, Fallbrook, CA, United States
An, Haoyun, Carlsbad, CA, United States
Wang, Tingmin, San Marcos, CA, United States
Manoharan, Muthiah, Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6414135 B1 20020702
AI US 1999-349035 19990707 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wilson, James O.
LREP Woodcock Washburn LLP
CLMN Number of Claims: 7
ECL Exemplary Claim: 1
DRWN 15 Drawing Figure(s); 15 Drawing Page(s)
LN.CNT 2702
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention is directed to nucleoside monomers wherein the 3'-O atom is replaced with a methylene group. The present invention also provides oligomers comprising a plurality of such monomers which are linked by methylenephosphonate linkages. Further, methods of preparing monomers and oligomers according to the present invention are provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 18 OF 28 USPATFULL on STN
AN 2002:130084 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Cheruvallath, Zacharia S., San Diego, CA, United States
Ravikumar, Vasulinga T., Carlsbad, CA, United States
Cole, Douglas L., San Diego, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6399756 B1 20020604
AI US 1999-349659 19990708 (9)
RLI Continuation-in-part of Ser. No. US 1998-111678, filed on 8 Jul 1998, now abandoned
DT Utility
FS GRANTED
EXNAM Primary Examiner: Geist, Gary; Assistant Examiner: Crane, L. E.
LREP Woodcock Washburn LLP
CLMN Number of Claims: 52
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 2423
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 19 OF 28 USPATFULL on STN
AN 2002:106412 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Cheruvallath, Zacharia S., San Diego, CA, UNITED STATES
Ravikumar, Vasulinga T., Carlsbad, CA, UNITED STATES
Cole, Douglas L., San Diego, CA, UNITED STATES
PA ISIS Pharmaceuticals. Inc. (U.S. corporation)
PI US 2002055623 A1 20020509
US 6521775 B2 20030218
AI US 2001-16465 A1 20011211 (10)

RLI Division of Ser. No. US 1999-349659, filed on 8 Jul 1999, PENDING
Continuation-in-part of Ser. No. US 1998-111678, filed on 8 Jul 1998, PATENTED
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, One Liberty Place - 46th Floor, Philadelphia, PA, 19103
CLMN Number of Claims: 57
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 2243
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 20 OF 28 USPATFULL on STN
AN 2002:1324 USPATFULL
TI Methods for the preparation of conjugated oligomers
IN Manoharan, Muthiah, Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6335437 B1 20020101
AI US 1998-149156 19980907 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wilson, James O.; Assistant Examiner: Owens, Howard
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 41
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 1645
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides novel methods for preparing oligonucleotide conjugates using a novel electrophilic haloacetyl linker. Novel compounds and intermediates are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 21 OF 28 USPATFULL on STN
AN 2001:221150 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Cheruvallath, Zacharia S., San Diego, CA, United States
Ravikumar, Vasulinga T., Carlsbad, CA, United States
Cole, Douglas L., San Diego, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6326478 B1 20011204
AI US 1998-111678 19980708 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Geist, Gary; Assistant Examiner: Crane, L. E
LREP Woodcock Washburn LLP
CLMN Number of Claims: 40
ECL Exemplary Claim: 1,37
DRWN No Drawings
LN.CNT 1714
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 22 OF 28 USPATFULL on STN
AN 2001:4883 USPATFULL
TI Aminooxy-modified oligonucleotides and methods for making same
IN Manoharan, Muthiah, Carlsbad, CA, United States
Cook, Phillip Dan, Lake San Marcos, CA, United States
Prakash, Thazha P., Carlsbad, CA, United States
Kawasaki, Andrew M., Oceanside, CA, United States
PA ISIS Pharmaceuticals Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6172209 B1 20010109
AI US 1998-130973 19980807 (9)
RLI Continuation-in-part of Ser. No. US 1998-16520, filed on 30 Jan 1998
PRAI US 1997-37143P 19970214 (60)
DT Patent
FS Granted
EXNAM Primary Examiner: Geist, Gary; Assistant Examiner: Crane, Larson
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 37
ECL Exemplary Claim: 1
DRWN 29 Drawing Figure(s); 29 Drawing Page(s)
LN.CNT 3602
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Oligonucleotides and other macromolecules are provided which have increased nuclease resistance, substituent groups (such as 2'-aminooxy groups) for increasing binding affinity to complementary strand, and subsequences of 2'-deoxy-erythro-pentofuranosyl nucleotides that activate RNase H. Such oligonucleotides and macromolecules are useful for diagnostics and other research purposes, for modulating the expression of a protein in organisms, and for the diagnosis, detection and treatment of other conditions susceptible to oligonucleotide therapeutics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 23 OF 28 USPATFULL on STN
AN 2000:168199 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Capaldi, Daniel C., San Diego, CA, United States
Ravikumar, Vasulinga T., Carlsbad, CA, United States
PA Isis Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6160152 20001212
AI US 1999-414145 19991007 (9)
RLI Division of Ser. No. US 1998-21277, filed on 10 Feb 1998, now patented, Pat. No. US 6020475
DT Utility
FS Granted
EXNAM Primary Examiner: Geist, Gary; Assistant Examiner: Crane, L. E.
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1218
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, and phosphorodithioate covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 24 OF 28 USPATFULL on STN
AN 2000:125213 USPATFULL
TI Phosphate and thiophosphate protecting groups
IN Guzaev, Andrei P., Carlsbad, CA, United States
Manoharan, Muthiah, Carlsbad, CA, United States
PA Isis Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)

PI US 6121437 20000919
AI US 1999-268797 19990316 (9)
DT Utility
FS Granted
EXNAM Primary Examiner: Leary, Louise N.
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 61
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 2616
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel phosphorus protecting groups, intermediates thereof, and synthetic processes for making the same are disclosed. Oligomeric compounds are prepared through the protection of one or more internucleosidic phosphorus functionalities, preferably followed by oxidation and cleavage of the protecting groups to provide oligonucleotides.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 25 OF 28 USPATFULL on STN
AN 2000:47356 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Ravikumar, Vasulinga T., Carlsbad, CA, United States
PA Isis Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6051699 20000418
WO 9719092 19970529
AI US 1998-68275 19980506 (9)
WO 1996-US18618 19961115
19980506 PCT 371 date
19980506 PCT 102(e) date
RLI Continuation-in-part of Ser. No. US 1995-560540, filed on 17 Nov 1995, now patented, Pat. No. US 5705621
DT Utility
FS Granted
EXNAM Primary Examiner: Wilson, James O.
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 62
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 2479
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, and phosphorodithioate covalent linkages. Also provided are synthetic intermediates useful in the processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 26 OF 28 USPATFULL on STN
AN 2000:12938 USPATFULL
TI Process for the synthesis of oligomeric compounds
IN Capaldi, Daniel C., San Diego, CA, United States
Ravikumar, Vasulinga T., Carlsbad, CA, United States
PA Isis Pharmeuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6020475 20000201
AI US 1998-21277 19980210 (9)
DT Utility
FS Granted
EXNAM Primary Examiner: Crane, L. Eric
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 62
ECL Exemplary Claim: 1,20,41
DRWN No Drawings
LN.CNT 1445
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, and phosphorodithioate

covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d l9 27-28 bib abs

L9 ANSWER 27 OF 28 USPATFULL on STN
AN 1999:4883 USPATFULL
TI Process for the synthesis of oligomeric **phosphite**, phosphodiester, phosphorothioate and phosphorodithioate compounds
IN Ravikumar, Vasulinga T., Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 5859232 19990112
AI US 1997-962175 19971031 (8)
RLI Division of Ser. No. US 1995-560540, filed on 17 Nov 1995, now patented, Pat. No. US 5705621
DT Utility
FS Granted
EXNAM Primary Examiner: Wilson, James O.
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 18
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1875
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, and phosphorodithioate covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 28 OF 28 USPATFULL on STN
AN 1998:1901 USPATFULL
TI Oligomeric **phosphite**, phosphodiester, Phosphorothioate and phosphorodithioate compounds and intermediates for preparing same
IN Ravikumar, Vasulinga T., Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 5705621 19980106
AI US 1995-560540 19951117 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Wilson, James O.
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 28
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1919
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Synthetic processes are provided wherein oligomeric compounds are prepared having phosphodiester, phosphorothioate, and phosphorodithioate covalent linkages. Also provided are synthetic intermediates useful in such processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.